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ABSTRACT

Traditionally, postsecondary education is based on a selective model in which students are uniformly expected to benefit from the methods of instructors and their concepts of appropriate curriculum and educational goals. Under this system, 30 to 70 percent of all community college students become part of an attrition statistic. In order to adapt education to the student, the entire college environment must be analyzed, both for the factors that cause student attrition and for the various resources that might be utilized to meet student needs and to counteract these factors. This paper presents an adaptive education model, which operates on a causal stratum and a decision stratum. The causal stratum involves the identification of the reasons why students do not attain their educational goals in the particular institution. The decision stratum involves the construction of a methodology for eliminating causal factors, including problems in curriculum, evaluation of student performance, counseling services, and roles of counselors and instructors. The model utilizes a "systems-dynamic" approach, which realizes that the data elements of both strata are constantly changing. If predictors of student success in the present institution are poor, this model should be able to point out specific changes which in turn can prevent the projected results. (DC)

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STUDENT ATTRITION IN THE OPEN-DOOR COMMUNITY COLLEGE: A WORKING HYPOTHESIS

by E. Maynard Moore, Ph.D.

In the spring of 1971, Frank Newman and his associates on the prestigious Task Force on Higher Education, published their heralded and controversial report in which they called for a "serious debate" on several problems in higher education. One of the problem areas identified by the Task Force, and one of the most hotly debated points, centered on the problem of attrition and retention. On the basis of their findings, the Newman Commission contended that less than half the students who enter colleges come out with a degree. This is a statistic which the Task Force linked with the phenomenal growth of colleges and universities over the last twenty years, nurtured by the open access movement in higher education. Specifically, the statistics show that of the more than one million young people who enter college each year, fewer than half will complete two years of study, and only about one-third will ever complete a four-year course of study.[1] This is what the Newman group labeled "the paradox of access".

The findings of the Newman Task Force were not particularly new. The report merely reopened a continuing debate in the higher education community which was now being carried on within a larger context of the new debate on "accountability" and "educational outputs". The problem of attrition was an old problem--it merely seemed more urgent because now taxpayers, parents, legislators and many others were asking some new questions. Many within the higher education community itself were quick to assume a defensive stance. The National Association of Land-Grant Colleges and Universities immediately began to produce a different analysis of the Newman group's data, and other educational associations, notably the American Council on Education, joined in the debate with different facts and figures, and, of course, different conclusions. Even these reports, however, left little room for comfort.

In one of the ACE sponsored studies, Alexander Astin utilized a representative sample of 217 institutions. All of the students in the survey entered college in the fall of 1966 and four-year follow-up data were secured during the fall of 1970 and the winter of 1970-71. Various measures of "retention" were used but the most comprehensive was that a student was counted as "retained" if he or she had "received the bachelor's degree, was still enrolled for work toward a degree, or had transcripts sent to another institution."[2] Of course, some students never used the transcript or, if they did, dropped out of the institutions to which they transferred. Using even these very general criteria, only 65.9 percent of all students who went to two-year colleges and 81.2 percent of all students who went to four-year colleges and universities were retained. Thus, approximately 20 percent of those attending four-year colleges and universities dropped out of school.

Just recently, ACE has produced a new study, authored by Elaine H. El-Khawas and Ann S. Bisconti, called "Five and Ten Years After College Entry".[3] This is a 156-page report based on questionnaire data on 24,590 of the 705,512 freshmen enrolled at four-year colleges and universities in 1961, and 26,618 of the

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1,309,524 freshmen enrolled at four-year and two-year schools in 1966. The overall conclusion of the study is that most college students end up earning an undergraduate degree within ten years after they first enter college, even though they tend (increasingly) to "stop out" for a while. (This is confirmation of a phenomenon that was first noted by K. Patricia Cross several years ago:[4] today's students don't just drop out; they tend to "stop out" and then go back and finish up after a few years' rest.) This study, which ACE claims to be the first national longitudinal study of college students encompassing a ten-year span, reports that 80 percent of the 1966 freshmen had, in fact, earned some kind of degree by 1971. Further, the report indicated that many of those who had not earned a degree in 1971 were still planning on finishing up at some time in the future.

There were some other interesting findings which will be new grist for the old mill. The study reported remarkable similarities between the 1961 and 1966 cohort groups, relative to values, goals, and "practically identical" long run degree plans, graduate fields of study, and career aspirations. Women, in addition to earning higher grade point averages than men, are more likely to complete their degree work in four years' time. Nevertheless, large numbers of women "stop out" for a while too, so that overall, it is becoming increasingly unrealistic to expect the attainment of a baccalaureate in a four year period. Moreover, and significantly, for both groups, one-fourth of the dropouts left college in the <u>first</u> 16 months, and the peak attrition occured within the first two years of matriculation. This is particularly important for two-year institutions to note. Since the authors are primarily interested in the numbers and percentages of students who <u>finish</u> with degrees, not much separate attention is paid to the achievement patterns of those who entered two-year schools to begin their education. Nevertheless, the wealth of data in the 155 separate tables have much potential for further analysis. Still, it might be noted that six years after entering college, fully 30 percent of the 1966 freshman cohort had not yet earned an associate degree or its equivalent.

As might now be noted, analysis and interpretation of the "drop out" statistics or the "stop out" phenomenon can go on endlessly, and any number of conclusions can be drawn from the same data. Comparative studies are almost impossible because of the great discrepancies in the initial definition of terms. Does "retention" refer to a cohort of students who end with a degree regardless of the number of institutions or the number of years it takes them? Or, is retention best measured within a single institution and within the traditional time frame of four years? Does "attrition" refer to patterns of progress toward a degree regardless of the <u>expectation</u> of the students upon entering the institution? Or, does attrition refer even more specifically to students leaving between terms or even in the middle of a term? What about the "transfer" phenomenon? The whole discussion of the trasnfer function of the two-year curriculum assumes that the movement is always in one direction: to the senior institution. Yet, in a study made in one state, almost as many people transferred <u>into</u> community colleges as transferred out of them.[5]

Whatever the definition of the terms, it can be noted that the broader the parameters of the definition, the greater will be the number of students "retained". For our discussion, however, focused upon the two-year open access community college, our definition of the term "attrition" need only be specified to make reference to the student's lack of success in achieving the objective he sets for himself upon entering the school. A number of students,

it should be noted, neither intend nor expect to earn an A.A. degree from the institution when they enter. Many enroll in special certificate programs or come seeking only some enhancement of skills for their employment. Many others who do aspire to a baccalaureate or beyond, enter the community college with the intent of staying only one year in order to earn some credits, earn some money, or achieve some self-confidence before attempting the state university or liberal arts college. Such students as these must be considered "achievers" on their own self-defined educational path, and the two-year institution should be commended for providing them their opportunity through "easy exit" policies as well as open access.

The point of this is that the measurement of "attrition" rates must take into account the expectations of students when they enter the institution. In the open door community college, anything else, such as foolhardy efforts to measure attrition by counting the number of degrees earned, is ill-advised and self-defeating. Nevertheless, when all this has been said, the fact remains that attrition rates in the community college, even when properly defined and measured, are high, perhaps alarmingly so. The previously cited studies, and others, indicate that somewhere between 30 and 70 percent of all students who enter community colleges become part of an attrition statistic, that is, they do not achieve what they set out to accomplish. This raises all sorts of questions about the nature of the education that such colleges are offering, and most of us are rightly concerned about lowering the rates. However, it is important to approach the matter with perspective. For our purposes here, the term attrition will refer to the students who leave school, for whatever reason, having failed to achieve what they set out to accomplish, whatever that objective. This is important, because with this perspective, programs to cut attrition then are constructed not on the basis of predictor models, but on the basis of facilitating student achievement whatever their goals and however often their objectives change.

One also has to approach the problem with caution. Attrition is not one problem, but represents a colony of interacting factors, which present to the academic administrator a tangled situation in which it is increasingly difficult to identify discrete causal factors and hence to apply discrete solutions. The "problem" turns out to be a maze of interacting difficulties, each of which is but a symptom of a basic institutional malaise rather than a separate independent entity. To seek to eradicate the individual symptoms without fully diagnosing the basic malaise likely will lead to the breaking out of new difficulties in other parts of the complex not demonstrably linked to the original action. The problem, even in the "value-added" theory of education, is one of an institution wasting its resources by its failure to assist its students to realize their legitimate educational expectations. The problem is a wide ranging one for the comprehensive community college because the students who walk through the open door have such a wide range of expectations, not to mention abilities, backgrounds, and talents.

Thus, one of the first assumptions about the causal factors behind attrition has to do with their high degree of aggregation. The rich heterogeneity of the open door student population, particularly in the urban setting, with its mosaic of different environments and levels of development, implies a corresponding heterogeneity in the need for and motivations behind learning. Students come to and exit from the institution for all kinds of reasons. The

various curves and trends of an aggregated model represent averages which can never tell accurately the story for the institution as a whole, nor be used to approximate an accurate description for any specific group of students. Factors for exiting must be evaluated in the context of defined student expectations when arriving. Early in the game, an effort must be made in the institution to identify and categorize these expectations, and analysis of attrition later must measure the achievements of specific groups against their stated objectives when arriving.

In an aggregated model, the institution must be divided into a set number of mutually interacting and interdependent segments, each with a distinct degree of ideological, economic and environmental coherence. The model should not presuppose the traditional arrangements between the disciplines or between "academic" and "support" functions. The model is based not so much on a multi-level, hierarchical method, but operates on a causal stratum and a decision stratum, each of which is provided with a series of levels which vary in accordance with the type and complexity of the service system under study. For example, the causal stratum may have a geophysical dimension (including physical plant, environment and transportation networks); a technological dimension (including tuition and fee structures, and student influence on decision making); and a social dimension relating to the level of consonance between the ethno-social profile of students and the goals and pace of the institution.

Once the segments of the causal stratum are identified, a methodology for attack on the specific factors can be constructed. And, just as the initial analysis of the problem yields the conclusion that the setting is a complex one with an aggregate number of interacting factors, the decision making structure must similarly reflect a highly multivariant system. The approach suggested here might be called the "systems-dynamic" method. This approach takes into account the same complexities of factors on the causal stratum. It is also based on three assumptions that become operating principles on the decision making level.

First, the initial model will be tentative and incomplete. Only a few institutional variables of importance need be used. Restriction to quantifiable data will make it impossible to include extraneous factors or to allow explicitly for changes in value. Even for the variables employed, data will often remain inadequate, and therefore conclusions tentative.

Second, a global aggregation of causal factors has been made on the basis of the variables to be included. This has the limitation that the conclusions of the model cannot apply uniformly in an essentially heterogeneous world. The object of the model, therefore, is not to give specific policy guidance, but to allow overall reflection on the material condition of the universe of students involved. Later, work will be required to disaggregate, deepen, extend, and refine the conclusions.

Third, the dangers of extrapolation are appreciated, particularly when one is examining exponential phenomena as is often the case in student attrition. Thus, and most important, the model is not to be prescriptive, but is to indicate what <u>might</u> result if institutional policies and practices remain <u>unchanged</u>. Consequences of policies can never be accurately predicted, but some results can be foreseen as trends are linked to specific practices within an institution.

Decision making within this context is usually bathed in uncertainty. Objectives may be more or less clearly defined, political and ideological principles respected, and statistical data and qualitative analysis may be to some extent available. Action is then based on a human assessment of these, and it draws upon the accumulated experience as to the probable consequences of the various options through a process which is partly intuitive. The normal mental mode of the decision maker is usually relatively simple. Its great human qualities are intuition, past experience, and political, psychological, and social judgment. It may not, however, be able to assimilate multiple variables with certainty. It is, therefore, crucial that the systems-dynamic method should reinforce these human qualities with analyzed data and some degree of qualitative interaction of the variables, making possible projections and explorations of alternatives.

With consonance between the analysis of attrition factors on the causal stratum and the operating assumptions on the decision making stratum, we can conclude by stating the working hypothesis which is the subject of this paper. Once again, the hypothesis is consistent with the systems-dynamic method by which we are approaching the problem. And, it is consistent with some other conclusions that have been reached in other quarters about the predictability of student performance in college, namely, that prediction of success in college is very difficult, if not impossible, to achieve. Relative to the problem of student attrition, and particularly in the open access community college, the working hypothesis is this: the aim of the model must be <u>prophylactic</u> and <u>not prophetic</u>. It is really a simple principle to remember. If predictors of student performance are so poor, our model to attack the multivariant and aggregated causal factors of student attrition should be able to point out specific changes which in turn can <u>prevent</u> the projected results.

If high rates of student attrition in our open access community colleges are an indication that we are failing in our effort to assist students to achieve their educational objectives, perhaps it is because, unwittingly, the policies and practices of our institutions are based upon a selective model of education which remains the foundation of our philosophy. Traditionally, all systems of education in this country have served a selective function. At each level, large numbers of students are screened out through testing, grading, and other techniques. This orientation is thoroughly reinforced by a reward system that is founded on graduate education and research. Accepting the philosophy that supports them, faculties accommodated the "new students" to higher education grudgingly, expanding only slightly the traditional version of the curriculum. The large numbers of students who cannot become involved meaningfully are assumed not to belong in school at all. "Maintaining high standards" then becomes an excuse for not caring about the fate of those "left out" students. And, the comfortable assumptions remain intact. Selective education is so appealing because it does not require very much intuitive understanding of the requirements for intellectual and personal development.

The power and pervasiveness of the selective education model is reflected in and founded upon the wide reliance of higher education on admissions testing. The prestige and power of the educational testing industry have been used to justify college admissions procedures and to support traditional educational practices. Years of research and great technical sophistication have gone into the creation of selection instruments such as the SAT and ACT. Yet, years of research have failed to demonstrate a substantial relationship between achieve-

ment on these tests and success in college.[6] Nor has success in college been correlated with success in later life.[7] Yet, the utilization of the test scores goes on.

Meanwhile, the fabric of American society has changed. Civil rights confrontations, disillusionment about Viet Nam, the temptations of the drug culture, a generation of affluence, all combined to shake the established values of society in which higher education participates. Higher education, however, has now begun to reflect serious symptoms of the inefficiency of its operating model of selectivity. The drop out rate nationally, as we have noted, remains annually at 50 percent; those students who do graduate often have no clear idea of where they are headed or what competence they possess; and ever greater numbers of students think of themselves as marginal individuals with little personal worth or social value. With all the conflicting subcultures among college youth today, perhaps the one unifying theme among them is a consensus about the inappropriateness of the selective model, with all its competiveness, in which higher education has them trapped. For many, the only viable alternative they see is to leave.

As a result, higher education is faced with significant discrepancies between its operating assumptions and its commitments to certain objectives. The emphasis through most of the 1960s was on production to meet the ever expanding needs of American society, with our national survival linked at times to the continued growth of higher education. The pressure to conform to the presumed and real needs of America's post-industrial society was so great that no time was left for critical reassessment of basic assumptions. Thus, in spite of ever-increasing enrollments, the basic assumption, the selective education model, remained largely intact.[8]

Today, the selective model of education is failing precisely because it cannot come to grips with large enrollments of diverse students, particularly those in the community colleges. Glaser, assessing the failure of standard measures of apitude to predict performance, has argued that adaptive education will take the place of selective education.[9] Adaptive education requires that an institution have extensive knowledge of each student's background, talents, and interests so that it might develop alternative means of learning to maximize the student's success. The educational environment must provide a rich variety of instructional methods and new ways of evaluation.

The new model must account for both the continuing valuable role of the faculty and the increasing demands by students and the public that undergraduate education be more attuned to the realities of contemporary society. Such a model must account for the needs of our educational system to be selective in the sense of certifying certain levels of competence, and at the same time take responsibility for educating every student. Fulfilling this latter responsibility will necessitate a much clearer understanding of the requirements for intellectual and personal development.

At present, teaching in the community college is continually being subverted by the pressure to credential competence coming from the philosophical basis of selective education. But, large numbers of students in the community college are not adequately prepared or sure enough of their goals to meet the standards created by the faculty in their undergraduate courses. Thus, the faculty is presented with the impossible task of maintaining standards of "academic excel-

lence" while also working with students who cannot meet those standards for one reason or another. A new kind of instruction is required to work with students to prepare them to meet the standards of the credentialing process.

Similarly, the traditional type of counseling service is doomed to failure because of unrealistic expectations on the part of students and its isolation from the activities of the classroom. No matter how sensitive its people are, and no matter how broadly its role is defined, the isolated counseling center will fail so long as it reflects the undergirding selective education model. A new model is needed with at least two components: new types of learning experiences for which students can receive assessment toward academic credit, and defined faculty responsibilities to advise teams of students committed to building new instructional programs appropriate to their needs.

The distinction that is ordinarily made between student services and the formal curriculum is the source of much of the difficulty. As long as this arbitrary distinction is maintained we cannot hope to achieve the goals of adaptive education. The organizational split between student services and the formal curriculum will perpetuate the status quo. Traditional departmental or even college-wide structures do not focus on the student as a developing human being. Departments and colleges are discipline oriented. In a graduate department, that orientation is inevitable if not justifiable, as emphasis is placed on the accumulation of credit hours without regard to the impact on the student.

Traditional educational structures also ignore the problem of where the student goes after he leaves the program. This total disregard for both the manpower needs of society and the career goals of the student is one of the most serious omissions in contemporary community college education. This issue draws the critical attention of both parents and the legislature. Adaptive education requires that the institution take direct responsibility for helping the student make optimal use of educational opportunities. Attention must be paid to the individual learning style of the student and the range of instructional experiences available to him. The key is the emphasis on the continuous interaction between the two.[10]

The adaptive model is based on the principle of interaction and dialogue. The decision maker and his analysts can even use the computer to work out the possible consequences of certain potential decisions or to provide alternative scenarios to assist in coming to decisions. For the computer, too, is based on the principle of contextual uncertainty. Here the systems-dynamic rejects any ambition to predetermine the decision. The computer is simply a tool to reinforce and speed up human competence in decision making; it is an extension of that competence and in no way a replacement for it. For even then, decisions are always based on incomplete and ever-changing data, and the data selected and assumptions made will always reflect the values and dispositions of those who select and assume. After all, that is why we still select presidents and not computers to run both our country and our institutions of higher education.

This is the systems-dynamic approach in action. If our colleges are to respond to the changing demands of society and the various needs and expectations of our diverse students, radical changes will have to be made. In the process, the aggregate of factors for student attrition on the causal level will be met, and capacities for decision making can keep pace with the shifting demands of the

student population. To achieve a stance of adaptive education in the open access community college, the entire college environment must be analyzed, both for the factors that mitigate against the student making progress toward his educational goal, and for the constellation of resources that might be mobilized to meet the needs of a greatly enlarged student body diversified in motivations, values, and interests. In the process, the existing curriculum, which is likely grounded in the selective philosophy of education, must be drastically modified to permit the students to optimize their own potential for intellectual growth and personal development.

This model of adaptive education is based on the systems-dynamic approach to the problem of student attrition. Where attrition is concerned, the strategy and policies must be prophylactic. Causal factors are isolated which prevent students from achieving their goals, and decision making proceeds on the basis that changes can be introduced to prevent the results of those forces. The prophetic approach in the community college will not work. Effort, time and money should not be spent in predicting who will succeed and who will not. The assumption is that anyone can and everyone should succeed in his legitimately established educational goals, and the resources of the institution are then organized to facilitate that.

[1]Newman, Frank, et. al., Report on Higher Education (U.S. Dept. of HEW, Office of Education, March 1971), Ch. 1. These approximations were derived in and from a variety of sources, noted in Footnote 7, pp. 87-88.

[2]Astin, A. W., College Dropouts: A National Profile (American Council on Education, Research Reports, Vol. 7, No. 1, February 1972), p 4.

[3]El-Khawas, Elaine H. and Bisconti, Ann S., Five and Ten Years After College Entry (American Council on Education, Research Reports, Vol. 9, No. 1, 1974).

[4]Cf. e.g. Cross, K. Patricia, The Junior College Student: A Research Description (Princeton, N. J., Educational Testing Service, 1968).

[5]Cited by Houle, Cyril O., The External Degree (San Francisco: Jossey-Bass, 1973), p. 169.

[6]Cf. Holland, J. L. and Richards, J. M., "Academic and Non-Academic Accomplishment: Correlated or Uncorrelated?", Journal of Educational Psychology, 1965, Vol. 56, pp. 165-174. See also, Lavin, D. E., The Prediction of Academic Performance: A Theoretical Analysis and Review of Research (New York: Russell Sage, 1965).

[7]Hoyt, D. P., The Relationship Between College Grades and Adult Achievement, Iowa City, Research Report No. 7, 1965.

[8]Korn, H.A., "From Selective to Adaptive Education Through Human Services", in Katz, Joseph (ed.), Services for Students (San Francisco: Jossey-Bass, 1973), pp. 20-21.

[9]Glaser, R., "Individuals and Learning: The New Aptitudes", Educational Researcher, June 1972.

[10]Korn, op. cit., p. 28.

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